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Thomas E. Slowe

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EXAMINER

RAO, ANAND SHASHIKANT

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/978,592

Applicant(s)

SLOWE ET AL.

Examiner

Andy S. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/19/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 and 32-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 and 32-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action of 3/14/05 as discussed in the Interview Summary of 5/19/05 is persuasive and, therefore, the finality of that action is withdrawn.
2. Applicant's arguments with respect to claims 1-30, 32-34 as filed on 9/16/04 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-30 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al., (hereinafter referred to as "Zhang").

Zhang discloses a computer-readable medium having software (Zhang: paragraph [0068], lines 1-10) for editing a decomposed original video sequence, said decomposed original video sequence comprising one or more original motion layers (Zhang: paragraph [0155], lines 20-30; paragraph [0175], lines all: "extracted STE image") and zero or more original fixed-frame layers decomposed from an original video sequence (Zhang: paragraph [0074]: lines 5-10), said software comprising: code segments (Zhang: paragraph [0068], lines 12-17) for editing at least one of said original motion layers to obtain modified motion layers such that each frame of a

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composite modified video sequence composed from said modified motion layers (Zhang: [0181], lines 1-10), and said original fixed-frame layers is obtained without editing each frame of said original video sequence (Zhang: paragraph [0100], lines 1-13) said editing comprising performing an edge operation (Zhang: paragraph [0184], lines 1-9) to one of said original motion layers (Zhang: paragraph [0177], lines 7-13: generating a “contour outline” in the STE extracted image), as in claim 1. However, Zhang fails to specifically disclose that the motion layers are camera motion layers as in the claim. But Zhang does disclose that camera motion contributes to the total detected motion of an image particularly in terms of detecting global motion (Zhang: paragraph [0089], lines 1-9; paragraph [0112], lines 1-20) conferred to the image through a zooming or panning operation of the camera in order discriminate between tracking and panning shots in a sequence of frames (Zhang: paragraph [0165], lines 15-30). Accordingly given this teaching, it would have been obvious for one of ordinary skill in the art to have the motion layers include camera motion parameters in order to have the Zhang computer readable medium also have the ability of using STE images to discern between tracking and panning frames in an original sequence of frames (Zhang: paragraph [0165], lines 20-32). The Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, has all of the features of claim 1.

Regarding claim 2, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for converting one of said original

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camera-motion layers to said original image code segments for performing said edge operation to said original image to obtain an edge image code segments for editing said edge image to obtain a modified image (Zhang: paragraph [0181], lines 1-13: “normalizing the STE images”) and code segments for converting said modified image to one of said modified camera motion layers (Zhang: paragraph [0182], lines 5-30), as in the claim.

Regarding claim 3, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for rectifying said original image prior to performing said edge operation (Zhang: paragraph [0175], lines 10-22: extracting using a histogram); code segments for rectifying said modified image prior to converting said modified image (Zhang: paragraph [0180], lines 1-10), as in the claim.

Regarding claim 4, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for inserting a portion into, deleting a portion from, or changing a portion of one of said original camera-motion layers to obtain one of said modified camera-motion layers (Zhang: paragraph [0182], lines 5-40).

Regarding claim 5, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for replacing one of said original camera-

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motion layers with another camera- motion layer to obtain one of said modified camera-motion layers (Zhang: paragraph [0182], lines 20-30: “eliminating motion regions” in the STE images), as in the claim.

Regarding claim 6, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for adding a video sequence to one of said original camera-motion layers to obtain one of said modified camera-motion layers (Zhang: paragraph [0185], lines 5-12: using a “sliding window” of initial frames of the video to generate an STE image), as in the claim.

Regarding claim 7, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for adding an animation sequence (Zhang: paragraph [0110], lines 1-15) to one of said original camera-motion layers to obtain one of said modified camera-motion layers (Zhang: paragraph [0181], lines 10-17), as in the claim.

Regarding claim 8, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for adding a three-dimensional object to one of said original camera-motion layers to obtain one of said modified camera-motion layers (Zhang: paragraph [0182], lines 20-30).

Regarding claim 9, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers comprise: code segments for adding a user-activated region to one of said original camera-motion layers to obtain one of said modified camera-motion layers (Zhang: paragraph [0183], lines 1-10: region defined by “boundary box”), as in the claim.

Regarding claim 10, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for modifying an on/off time of one of said original camera-motion layers to obtain one of said modified camera-motion layers (Zhang: paragraph [0185], lines 5-15: on/off time met by time frame of “sliding window”).

Regarding claim 11, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068, lines 12-17] for modifying an opaqueness of one of said original camera-motion layers to obtain one of said modified camera-motion layers (Zhang: paragraph [0182], lines 20-30: dilating boundary pixels of an STE image to white pixels reads on modifying opaqueness)

Regarding claim 12, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises:

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code segments (Zhang: paragraph [0068], lines 12-17) for modifying fade-in/fade-out of one of said original camera-motion layer to obtain one of said modified camera-motion layers (Zhang: paragraph [0004], lines 1-12: fade in/fade out is an obvious feature of “key-frame characterization”), as in the claim.

Regarding claim 13, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for modifying an ordering of one of said original camera-motion layers with respect to other layers of said decomposed original video sequence to obtain said modified camera-motion layers (Zhang: paragraph [0141], lines 1-20: sorting in descending order of the STE images).

Regarding claim 14, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for deleting one of said original camera-motion layers of said decomposed original video sequence (Zhang: paragraph [0182], lines 20-30: eliminating extraneous motion regions).

Regarding claim 15, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for adding another camera-motion layer to said decomposed original video sequence, such that an ordering of said original camera-motion

layers with respect to other layers of said decomposed original video sequence is modified to obtain said modified camera-motion layers (Zhang: paragraph [0175], lines 5-15: ordering of the decomposed original video images established by extracted “gray scale” and “texture” layer information), as in the claim.

Regarding claim 16, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for modifying a size of one of said original camera-motion layer to obtain one of said modified camera-motion layer (Zhang: paragraph [0183], lines 1-10: modified size defined by said bounding box), as in the claim.

Regarding claim 17, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing said original camera-motion layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for editing camera motion parameters of one of said original camera-motion layer to obtain modified camera motion parameters (Zhang: paragraph [0165], lines 1-20: camera panning parameter), as in the claim.

Regarding claim 18, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing camera motion parameters further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for adjusting at least one of said camera motion parameters to obtain said modified camera motion parameters (Zhang: lines [0181], lines 1-14: “smoothing” of the camera motion parameters represented by the STE images).

Regarding claim 19, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing camera motion parameters further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for replacing said camera motion parameters with analytically-derived camera motion parameters to obtain said modified camera motion parameters (Zhang: paragraph [0165], lines 1-30: analysis of camera motion parameters through submitted queries), as in the claim.

Regarding claim 20, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing camera motion parameters further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for replacing said camera motion parameters with camera motion parameters from another video sequence to obtain said modified camera motion parameters (Zhang: paragraph [0177], lines 20-32: camera motion parameters from candidate shots used to generate STE images), as in the claim.

Regarding claim 21, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that editing at least one of said original fixed-frame layers to obtain modified fixed-frame layers, said editing comprising performing an edge operation to one of said original fixed-frame layers (Zhang: paragraph [0175], lines 1-15: extracting using a edge histogram is performing an edge operation), as in the claim.

Regarding claims 22-24, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera

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motion parameters, discloses that editing said original fixed-frame layers further comprises: code segments (Zhang: paragraph [0068], lines 12-17) for converting one of said original fixed-frame layers to an original image (Zhang: paragraph [0100], lines 1-10); code segments for performing said edge operation (Zhang: paragraph [0175], lines 10-20: extraction using edge histogram) to said original image to obtain an edge image (Zhang: paragraph [0177], lines 5-15: STE image including a “contour outline”); code segments for editing said edge image to obtain a modified image (Zhang: paragraph [0177], lines 5-15: a more detailed STE image); and code segments for converting said modified image to one of said modified fixed-game layers (Zhang: paragraph [0177], lines 15-21: final shot identification), as in the claim..

Regarding claim 25, the Zhang computer readable medium now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses a computer comprising the computer-readable of claim 1 (Zhang: paragraph [0068], lines 1-3), as in the claim.

Zhang discloses a method for editing a decomposed original video sequence, said decomposed original video sequence comprising one or more original motion layers (Zhang: paragraph [0155], lines 20-30; paragraph [0175], lines all: “extracted STE image”) and zero or more original fixed-game layers decomposed from an original video sequence (Zhang: figure 22), comprising the steps of: editing at least one of said original motion layers to obtain modified motion layers such that each frame of a composite modified video sequence composed from said modified motion layers (Zhang: paragraph [0181], lines 1-10) and said original fixed-frame layers is obtained without editing each game of said original video sequence (Zhang: paragraph [0100], lines 1-13), said editing comprising performing an edge operation (Zhang: paragraph

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[0184], lines 1-9) to one of said original motion layers (Zhang: paragraph [0177], lines 7-13: generating a “contour outline” in the STE extracted image), as in claim 26. However, Zhang fails to specifically disclose that the motion layers are camera motion layers as in the claim. But Zhang does disclose that camera motion contributes to the total detected motion of an image particularly in terms of detecting global motion (Zhang: paragraph [0089], lines 1-9; paragraph [0112], lines 1-20) conferred to the image through a zooming or panning operation of the camera in order discriminate between tracking and panning shots in a sequence of frames (Zhang: paragraph [0165], lines 15-30). Accordingly given this teaching, it would have been obvious for one of ordinary skill in the art to have the motion layers include camera motion parameters in order to have the Zhang method also have the ability of using STE images to discern between tracking and panning frames in an original sequence of frames (Zhang: paragraph [0165], lines 20-32). The Zhang method now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, has all of the features of claim 26.

Zhang discloses an apparatus for editing a decomposed original video sequence, said decomposed original video sequence comprising one or more original camera-motion layers and zero or more original fixed-frame layers decomposed from an original video sequence (Zhang: figure 1), comprising: means for editing at least one of said original motion layers to obtain modified motion layers such that each frame of a composite modified video sequence composed from said modified motion layers (Zhang: paragraph [0181], lines 1-10), and said original fixed-frame layers is obtained without editing each frame of said original video sequence (Zhang: paragraph [0100], lines 1-13), said editing comprising performing an edge operation (Zhang:

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paragraph [0184], lines 1-9) to one of said original motion layers (Zhang: paragraph [0177], lines 7-13: generating a “contour outline” in the STE extracted image), as in the claim 27. However, Zhang fails to specifically disclose that the motion layers are camera motion layers as in the claim. But Zhang does disclose that camera motion contributes to the total detected motion of an image particularly in terms of detecting global motion (Zhang: paragraph [0089], lines 1-9; paragraph [0112], lines 1-20) conferred to the image through a zooming or panning operation of the camera in order discriminate between tracking and panning shots in a sequence of frames (Zhang: paragraph [0165], lines 15-30). Accordingly given this teaching, it would have been obvious for one of ordinary skill in the art to have the motion layers include camera motion parameters in order to have the Zhang apparatus also have the ability of using STE images to discern between tracking and panning frames in an original sequence of frames (Zhang: paragraph [0165], lines 20-32). The Zhang apparatus now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, has all of the features of claim 27.

Regarding claim 28, the Zhang apparatus now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses means for editing at least one of said original fixed-frame layers to obtain modified fixed- frame layers (Zhang: paragraph [0004], lines 1-5), as in the claim.

Zhang discloses an apparatus for editing a decomposed original video sequence (Zhang: figure 1), comprising: an object based video encoder to decompose said original video sequence into a decomposed original video sequence, said decomposed original video sequence comprising one or more original motion layers and zero or more original fixed-frame layers

(Zhang: paragraph [0013], lines 1-30; paragraph [0164], lines 1-8: MPEG-7: “object based coding”); a video editor to perform an edge operation (Zhang: paragraph [0184], lines 1-9) to one of said original motion layers to edit said edge operated original motion layers to obtain a decomposed modified video sequence (Zhang: paragraph [0177], lines 7-13: generating a “contour outline” in the STE extracted image); an object based video compositor to compose said decomposed modified video sequence to obtain a composite modified video sequence, wherein each frame of said composite modified video sequence is obtained with editing each frame of said original sequence (Zhang: paragraph [0181], lines 1-10) comprising: means for editing at least one of said original motion layers to obtain modified camera-motion layers such that each frame of a composite modified video sequence composed from said modified motion layers and said original fixed-frame layers is obtained without editing each frame of said original video sequence (Zhang: paragraph [0100], lines 1-13), as in the claim 29. However, Zhang fails to specifically disclose that the motion layers are camera motion layers as in the claim. But Zhang does disclose that camera motion contributes to the total detected motion of an image particularly in terms of detecting global motion (Zhang: paragraph [0089], lines 1-9; paragraph [0112], lines 1-20) conferred to the image through a zooming or panning operation of the camera in order discriminate between tracking and panning shots in a sequence of frames (Zhang: paragraph [0165], lines 15-30). Accordingly given this teaching, it would have been obvious for one of ordinary skill in the art to have the motion layers include camera motion parameters in order to have the Zhang apparatus also have the ability of using STE images to discern between tracking and panning frames in an original sequence of frames (Zhang: paragraph [0165], lines 20-32). The Zhang apparatus now modified to have the extracted motion layers comprising the

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primary references extracted STE images include camera motion parameters, has all of the features of claim 29.

Regarding claim 30, the Zhang apparatus now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses having software (Zhang: paragraph [0068], lines 12-17) for implementing a video coloring books wherein said software comprises code segments for editing at least one camera-motion layer (Zhang: paragraph [0110], lines 10-17; paragraph [0155], lines 20-30: a sketch submitted), as in the claim.

Regarding claim 32, the Zhang apparatus now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that the camera-motion layer is decomposed from a video sequence (Zhang: paragraph [0076], lines 1-5).

Regarding claim 33, the Zhang apparatus now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that the camera-motion layer is an image (Zhang: paragraph [0177], lines 5-17: STE image is the motion image including a contour outline).

Regarding claim 34, the Zhang apparatus now modified to have the extracted motion layers comprising the primary references extracted STE images include camera motion parameters, discloses that the software comprising code segments (Zhang: paragraph [0068], lines 12-17) for editing at least one fixed-frame layer (Zhang: paragraph [0004], lines 1-7), as in the claim.

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Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wilensky discloses image extraction from complex scenes in digital video. Yomdin discloses geometric and brightness modeling of images. Isner discloses a manipulation of motion data in an animation editing system.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad S. Dastouri can be reached on (571)-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andy S. Rao
Primary Examiner
Art Unit 2613

asr
July 21, 2005

ANDY RAO
PRIMARY EXAMINER